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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/074,287

02/12/2002

Imad Mahawili

MIC04 P-113

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01/14/2004

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EXAMINER

FUQUA, SHAWNTINA T

ART UNIT

PAPER NUMBER

3742

DATE MAILED: 01/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/074,287

Applicant(s)

MAHAWILI, IMAD

Examiner

Shawntina T. Fuqua

Art Unit

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-77 is/are pending in the application.
- 4a) Of the above claim(s) 11-15, 23-33, 38-60, 66 and 70-74 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-8, 17-20, 22, 34-37, 61, 67 and 68 is/are rejected.
- 7) ☒ Claim(s) 3, 9, 10, 16, 21, 62-65, 69 and 75-77 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of Group I, Species A, claims 1-10, 16-22, 34-37, 61-65, 67-69, 75-77 in Paper No. 6 is acknowledged.
2. Claims 11-15, 23-33, 38-60, 66, and 70-74 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention/specie, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 6.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2, 4, 17, and 61 are rejected under 35 U.S.C. 102(b) as being anticipated by Noguchi (US5219786).

Noguchi discloses a processing chamber to support a substrate (1) therein means for applying a first energy source to a non-device side and applying a second pulse energy source to a device side wherein the intensity of the first energy is less than the pulse energy and the duration of the pulse energy is less than the duration of the first energy to control the depth of junctions, the pulse energy is 1 microsecond to 2 or 3 seconds, or 100-400 milliseconds, and

heating the device side to at least 900 degrees Celsius (column 2, line 31- column 3, line 23, Figure 1a and 1c).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5-8, and 67-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noguchi as applied to claims 1-2, 4, 17, and 61 above, and further in view of Mahawili (US5959896).

Noguchi discloses all of the recited subject matter except a first energy source with a peak energy of 0.2-3.0 microns, a plurality of tungsten halogen lamps wherein the lamps have a longitudinal extent and first group of lamps are parallel with the non-device side with a first heating zone about the perimeter and a second group of lamps at a second spacing from the non-device side to heat a central region. Mahawili discloses a first energy source with a peak energy of 0.2-3.0 microns, a plurality of tungsten halogen lamps wherein the lamps have a longitudinal extent and first group of lamps are parallel with the non-device side with a first heating zone about the perimeter and a second group of lamps at a second spacing from the non-device side to heat a central region (column 5, lines 15-42). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the lamps of Mahawili in the

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apparatus of Noguchi because, a plurality of lamps with separate zones allows the substrate to be heated more uniformly.

7. Claims 18-20, 22, and 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noguchi as applied to claims 1-2, 4, 17, and 61 above, and further in view of Mahawili (US5814365).

Noguchi discloses all of the recited subject matter except rotating the substrate during processing in a range of 5-300 rpms. Mahawili discloses rotating the substrate during processing in a range of 5-300 rpms (column 5, lines 40-48). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included rotating the substrate as taught by Mahawili in the apparatus of Noguchi because, rotating the substrate allows the dopants to be deposited more evenly.

#### ***Allowable Subject Matter***

8. Claims 3, 9-10, 16, 21, 62-65, 69, and 75-77 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

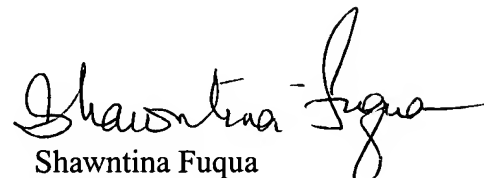
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawntina T. Fuqua whose telephone number is (703) 305-2581. The examiner can normally be reached on Monday-Friday 8-4:30 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teresa Walberg can be reached on (703) 308-1327. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3463.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.

stf  
January 12, 2004

  
Shawntina Fuqua  
Patent Examiner  
Art Unit 3742